

Improved optical planar waveguides for lasers

Completed Technology Project (2011 - 2013)



Project Introduction

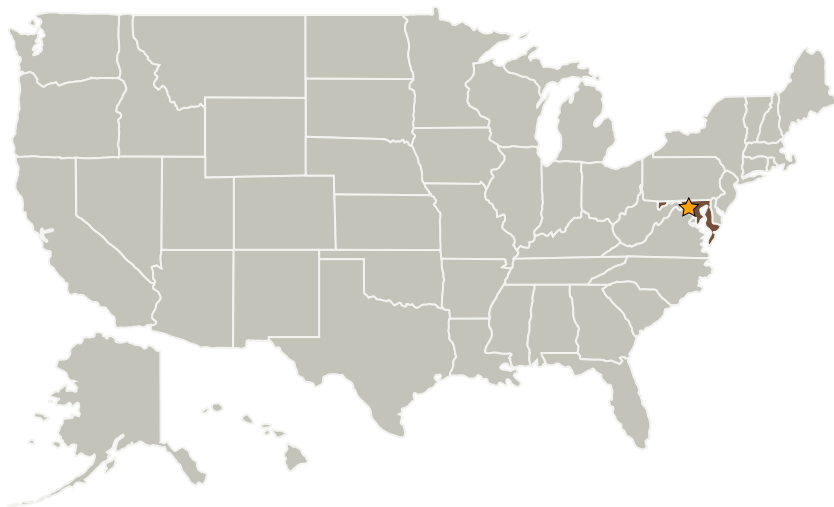
Planar Waveguides (PWGs) are extremely versatile and have demonstrated excellent performance but are difficult to manufacture. We will demonstrate a new, simpler, faster process that will also improve functionality and performance.

Demonstrate efficacy of a novel growth technique for planar waveguides (PWG) Enable PWG laser technology with improved performance, efficiency and manufacturability. Manufacture a planar waveguide more like a fiber, instead of building it piece-by-piece. Build an optimized PWG amplifier prototype using this technique Evaluate its performance Demonstrate potential of new technique Collaborators: NP Photonics, Inc.

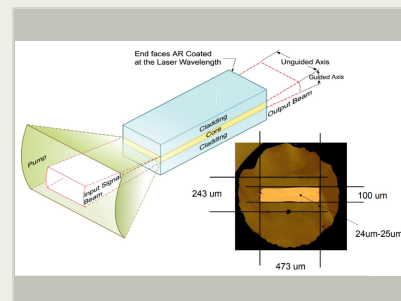
Anticipated Benefits

EV-3, ASCENDS, LIST, Laser Communications, 3-D WIND, other mapping and spectroscopic missions like trace-gas (methane, water vapor, etc.) detection for planetary and Earth exploration

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Goddard Space Flight Center(GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland



Project Image Improved optical planar waveguides for lasers

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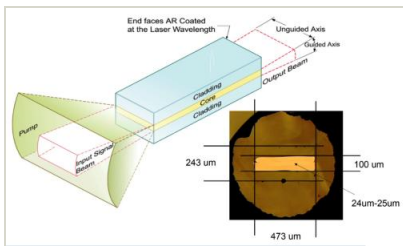
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Primary U.S. Work Locations

Maryland

Images



5250.jpg

Project Image Improved optical planar waveguides for lasers
(<https://techport.nasa.gov/image/1324>)

Project Website:

<http://aetd.gsfc.nasa.gov/>

Organizational Responsibility

Responsible Mission Directorate:

Mission Support Directorate (MSD)

Lead Center / Facility:

Goddard Space Flight Center (GSFC)

Responsible Program:

Center Independent Research & Development: GSFC IRAD

Project Management

Program Manager:

Peter M Hughes

Project Manager:

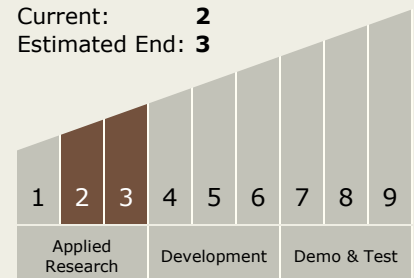
Terence A Doiron

Principal Investigator:

Mark A Stephen

Technology Maturity (TRL)

Start: 2
Current: 2
Estimated End: 3



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Technology Areas

Primary:

- TX08 Sensors and Instruments
 - └ TX08.1 Remote Sensing Instruments/Sensors
 - └ TX08.1.5 Lasers